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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,566	06/20/2001	Joachim Markert	70201	6188

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McGLEW AND TUTTLE
SCARBOROUGH STATION
SCARBOROUGH, NY 10510-0827

EXAMINER

MCANULTY, TIMOTHY P

ART UNIT

PAPER NUMBER

3682

DATE MAILED: 12/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,566

Applicant(s)

MARKERT, JOACHIM

Examiner

Timothy P McAnulty

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 3-10, 12, 19, 22, 24/3-10, 24/12, 24/19, 24/22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 11, 13-18, 20, 21, 23, 24/1-2, 24/11, 24/13-18, 24/20-21, and 24/23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of embodiment 6 - Figure 6 in Paper No. 4, filed 17 October 2002 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Although applicant indicates that claim 12 is readable on the elected embodiment, Figure 6 does not show an auxiliary motor provided on the shaft as claimed in claim 12. Accordingly, claims 3-10, 12, 19, 22, 24/3-10, 24/12, 24/19, and 24/22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected embodiment, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4, filed 17 October 2002.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore:

- a. the spur, bevel, worm, or epicyclic gear as claimed in claim 17, and
- b. the harmonic drive gear as claimed in claim 18,

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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Specification

4. The disclosure is objected to because of it includes terminology which is so different from that which is generally accepted in the art to which this invention pertains. For example: in the first full paragraph on page 6, part 4 is referred to as a gearbox and part 3 is referred to as a gear shaft. This is inconsistent with what is shown in Figure 6 and with that which is claimed.

Appropriate correction is required.

4. The specification is objected to under 37 CFR 1.71 because it fails to provide an enabling disclosure regarding the structure and operation of the present invention.

Specifically page 6 does not adequately describe the connection and interaction of the intermeshing gearwheels 16,17,18 with the first part 3 and the second part 4. It is not understood how the gearwheels make it possible to bridge the eccentric arrangement of the drive shaft 7 with respect to the gear axis 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 11, 13-18, 20, 21, 23, 24/1-2, 24/11, 24/13-18, 24/20-21, and 24/23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The recitation of the "particularly" in line 1 of claim 1, renders the claims indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

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b. In line 2 of claim 1, it is unclear as to what the recitation of "latter" refers.

c. In line 3 of claim 1, it is unclear as to what the recitation of "a movement of one part is removable on its side" limits the present invention as claimed.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,2,11,13-17,20,21,23, 24/1, 24/2, 24/11, 24/13-17, 24/20, 24/21, and 24/23 are rejected under 35 U.S.C. 102(b) as being anticipated by Eberle et al.

Eberle et al. in figures 1-4, discloses a robot joint having a gear comprising a motor 101 having a drive shaft 103 and a first part 115 having a shaft 106 extending into and rotatable relative to a second part 105.

Regarding claim 11, the shaft is inherently subject to a torque.

Regarding claim 21, the drive motor is inherently positioned under a finite angle with respect to the rotation axis of at least one of the parts.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 18 and 24/18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberle et al. in view of Iwata.

Eberle discloses the basic apparatus as previously cited but does not disclose said gear being a harmonic drive gear. However, Iwata discloses in figures 4-5, a harmonic speed changer arranged in an articulation between a first arm and a second arm of a robot. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Eberle in view of the teachings of Iwata to arrange the gear as a harmonic gear drive to eliminate backlash within the robot joint and thus improve accuracy of robotic movement.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent documents are cited to further show the state of the art regarding robotic gearing in general:

US Patent No. 4,841,811 to Bajulaz

US Patent No. 4,147,071 to Scribner et al.

US Patent No. 4,802,372 to Harrod et al.

US Patent No. 3,234,808 to Nelson

US Patent No. 4,685,861 to Huetsch

US Patent No. 3,108,498 to James et al.

US Patent No. 4,526,252 to Hirano

US Patent No. 2,983,163 to Pettavel

US Patent No. 4,259,809 to Mabuchi et al.


French Patent Application 2 613 449

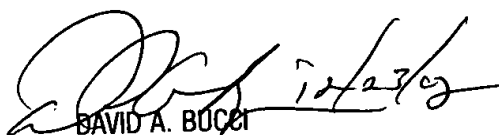
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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy P McAnulty whose telephone number is 703.308.8684. The examiner can normally be reached on Monday-Friday (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on 703.308.3668. The fax phone numbers for the organization where this application or proceeding is assigned are 703.305.7687 for regular communications and 703.305.7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1113.

tpm 
December 20, 2002


DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600